Berks, Bucks, and Philadelphia counties, Pennsylvania, on masonry along railroads.

The usual habitat of Pellaea glabella is described by Shaver (1954) as "mainly the sheer, vertical limestone bluffs near waterfalls or north-facing, vertical limestone cliffs by rivers, and especially such bluffs as are near the water." The limestone masonry, otherwise known as "Hokie stone", which faces most of the buildings on the Virginia Tech campus would seem to bear about as close a similarity to this habitat as any man-made structure might, save the proximity to water. The plants grow from mortar cracks which are well weathered. A search for other occurrences on the older buildings surrounding the Drill Field revealed only a few plants on Eggleston Hall which is adjacent to Owens. Although descriptors such as "north-facing" and "near water" often describe the habitat of this fern, in my experience, its often exposed setting appears to be a hot and dry microsite. The site on Owens is on a northerly exposure and was also deeply shaded by shrubbery immediately adjacent to the building. This protected setting may have ameliorated an otherwise harsh environment. With the shrubbery now cleared away, it will be interesting to see what changes if any will occur as a result of changes in the microclimate of the site.

Literature Cited

Knight, W.R. 1939. An unusual habitat for *Pellaea* glabella American Fern Journal 29:32-33.

Massey, A.B. 1944. The ferns and fern allies of Virginia. Bulletin of the Virginia Polytechnic Institute, Number 37. Blacksburg, VA. 110 pp.

Shaver, J.M. 1954. Ferns of Tennessee, with the fern allies excluded. George Peabody College for Teachers. Nashville, TN. 502 pp.

Wherry, E.T. 1943. *Pellaea glabella* on masonry. American Fern Journal 33:138-139.

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First Record of Tamiophila grandis (Insecta: Siphonaptera) from Virginia.

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A single female of the giant flea, *Tamiophila grandis* (Rothschild) was collected by Gerald E. Meier on 20 October 1989 from a female Eastern Chipmunk, *Tamias striatus* (L., 1758) from Burkes Garden, Tazewell County, Virginia. On 14 November 1993, another female *T. grandis* was collected by Ralph P. Eckerlin from a male chipmunk, also from Burkes Garden. Both flea specimens have been deposited in the collection at Northern Virginia Community College as accession numbers M-Ts¹-89 and M-Ts²-93 respectively. We have examined 27 chipmunks from Virginia, yet only two were infested, a

7.4% prevalence.

In the United States, *Tamiophilia grandis* is known from 12 states (CT, MA, ME, MI, MN, NH, NY, OH, PA, RI, VT, WI) (Benton,1980). In Canada, records exist from southern Ontario, eastern Quebec, and southern New Brunswick (Holland, 1985). The locality nearest to the present site is in Somerset County, PA (Holland & Benton, 1968) approximately 335 km to the north. This is the first record from Virginia and also the southernmost locality known for *T. grandis*.

Holland (1985) remarked that the distribution of T.

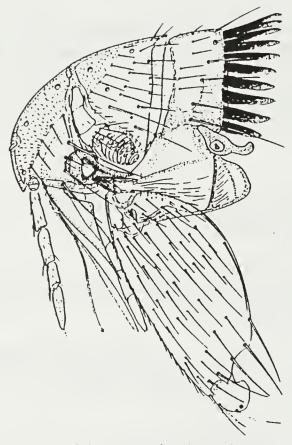


Figure 1. Tamiophila grandis - head, prothorax, and procoxa of female from Burkes Garden, VA

grandis does not coincide with the entire range of its chipmunk host. The Eastern Chipmunk ranges from Nova Scotia and New Brunswick in the northeast to Manitoba in the northwest, and to Oklahoma and northwest Florida in the south (Hall, 1981). Although it is not found in the Piedmont of North Carolina, South Carolina, and Georgia, the chipmunk is found in the Appalachian mountains south to Georgia.

Tamiophila grandis has had an involved taxonomic history. It was described as Typhlopsylla grandis by Rothschild (1902), transferred to Ctenopthalmus by Baker (1905), then to Neopsylla by Rothschild (1915). Jordan (1938) created the genus Tamiophila to accommodate the sole species T. grandis. Several synonyms also exist. It is placed in the family Hystrichopsyllidae, subfamily Neopsyllinae.

Tamiophila grandis is recognized by the following combination of characters: both genal and pronotal combs present, the genal comb of two spines crossing each other, frontal tubercle present, eye vestigial (Fig.1), abdominal terga with spinelets, sternite 9 of male with fringe of long bristles, and the large size of 4-6 mm.

The chipmunk appears to be the true host; however, Fox (1940) reports that other hosts include "cottontail

rabbit"; Red Squirrel, *Tamiasciurus hudsonicus* (Erxleben, 1777); and "weasel," *Mustela noveboracensis* (Emmons, 1840) (= *M. frenata* Lichtenstein, 1831). Osgood (1964) dug *T. grandis* out of chipmunk nests, and this flea is probably a nest inhabitant. For this reason, specimens of *T. grandis* are rare in collections. Most records are females collected in spring and fall (Benton, 1980). Both of our records are females taken in the fall.

We gratefully acknowledge the help of Gerald E. Meier, who spent many days in the field with us and who collected the first specimen of *T. grandis*. The comments of an anonymous reviewer improved the manuscript.

Literature Cited

Baker, C. F. 1905. The classification of the American Siphonaptera. Proceedings of the United States National Museum 29 (1417):121-170.

Benton, A. H. 1980. An Atlas of the Fleas of the Eastern United States. Marginal Media, Fredonia NY, 177pp.

Fox, I. 1940. The Fleas of Eastern United States. Iowa State College Press, Ames, IA. 191pp.

Hall, E. R. 1981. The Mammals of North America. Volume I., John Wiley and Sons, New York, NY. 600 pp.

Holland, G. P. 1985. The Fleas of Canada, Alaska, and Greenland (Siphonaptera). Memoirs of the Entomological Society of Canada Number 130. Ottawa, Canada. 631 pp.

Holland, G. P., & A.H.Benton. 1968. Siphonaptera from Pennsylvania mammals. American Midland Naturalist 80:252-261.

Jordan, K. 1938. On some nearctic Siphonaptera. Novitates Zoologicae 41:119-124.

Osgood, F. L. 1964. Fleas of Vermont. Journal of the New York Entomological Society 72:29-33.

Rothschild, N. C. 1902. Some new nearctic fleas. The Entomologist's Record and Journal of Variation 14:1-2.

Rothschild, N. C. 1915. On *Neopsylla* and some allied genera of Siphonaptera. Ectoparasites 1:30-44.